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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/700,078

11/03/2003

Brian Michael Bridgewater

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EXAMINER

RONESI, VICKEY M

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

12/03/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/700,078	<b>Applicant(s)</b> BRIDGEWATER ET AL.	
	<b>Examiner</b> VICKEY RONESI	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 August 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 10-18 is/are pending in the application.
- 4a) Of the above claim(s) 10-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 15-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/27/2008 has been entered.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior office action.

### ***Claim Rejections - 35 USC § 112***

3. Claims 16 and 17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

With respect to claim 16, the amount of initiator of 0.08 % based on the dry polymer weight during the first 10 wt % of monomer conversion fails to satisfy the written description requirement of 35 USC 112, first paragraph since there does not appear to be a written description requirement of the amount of 0.8 % in the application as originally filed, *In re Wright*, 866 F.2d 422, 9 USPQ2d 1649 (Fed. Cir. 1989) and MPEP 2163. Example 1 on page 17 of the specification only provides support for an initial amount 0.078 wt % and not for 0.08 wt %

Art Unit: 1796

during the first 10 wt % of monomer conversion. Furthermore, the amounts only provide basis for when the monomers are MAA, BA, and MMA.

With respect to claim 17, the amount of initiator of 0.03 % based on the dry polymer weight during the first 10 wt % of monomer conversion fails to satisfy the written description requirement of 35 USC 112, first paragraph since there does not appear to be a written description requirement of the amount of 0.3 % in the application as originally filed, *In re Wright*, 866 F.2d 422, 9 USPQ2d 1649 (Fed. Cir. 1989) and MPEP 2163. Example 2 on page 18 of the specification only provides support for an initial amount 0.3 wt % during the first 10 wt % of monomer conversion for a polymer prepared with a chain transfer agent (which is absent from claim 17). Furthermore, the amounts only provide basis for when the monomers are MAA, BA, and MMA.

#### ***Claim Rejections - 35 USC § 102/103***

4. Claims 2-5, 7, and 17 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Friel (US 5,731,377).

It is noted that claim 2 is a product-by-process claim where the phrase starting with “said emulsion polymer is formed by emulsion polymerization...” on line 7 until the end of the claim is not a claim limitation. Case law holds that “even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the

Art Unit: 1796

claim is unpatentable even though the prior product was made by a different process.” See *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Friel discloses a polymer blend useful as a binder in aqueous coating composition comprising no volatile organic solvent (col. 11, line 50); 40-80 wt % of a soft polymer having a  $T_g$  less than about 15 °C (preferably -5-10 °C); and 20-60 wt % of a hard emulsion polymer having a  $T_g$  greater than about 20°C (preferably 25-65 °C) (col. 12, lines 1-22), wherein the composition has a pigment volume concentration of 23.65 % (col. 10, line 13). Friel exemplifies the use of two soft polymers (Sample 3 and Sample 7) where *Sample 3* contains 97 wt % butyl acrylate and methyl methacrylate (i.e., monoethylenically unsaturated nonionic (meth)acrylic monomer), 2 wt % methacrylic acid (i.e., monoethylenically unsaturated acid monomer), and 1 wt % ureido-containing adhesion promoting monomer (i.e., aldehyde reactive group-containing monomer) and *Sample 7* contains 59 wt % butyl acrylate and methyl methacrylate, 2 wt % methacrylic acid, and 1 wt % ureido-containing adhesion promoting monomer (Table 1 on column 7, col. 8, line 30-35). Additionally, see Table 1 for amounts of initiator (ammonium persulfate) and neutralizer (sodium carbonate).

In light of the above, it is clear that Friel anticipates the presently cited claims.

Alternatively, given that the final products appear to be the same, it would have been obvious to one of ordinary skill in the art to obtain the presently claimed product with a different process.

***Claim Rejections - 35 USC § 103***

5. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Friel (US 5,731,377).

The discussion with respect to Friel in paragraph 4 above is incorporated here by reference.

With respect to PVC, Friel only exemplifies one painting composition and therefore only explicitly discloses one value for PVC, nonetheless, it teaches that the amount of pigment affects the glossiness or mat of the resulting coating (col. 1, lines 44-48).

It is the examiner's position that the amount of pigment and therefore the PVC is a result effective variable because changing it will clearly affect the type of product obtained, e.g., a coating with a mat or glossy finish. See MPEP § 2144.05 (B). Case law holds that "discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art." See *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

In view of this, it would have been obvious to one of ordinary skill in the art to utilize a higher content of pigment including that within the scope of the present claim so as to produce desired end results, i.e., a less glossy finish.

6. Claims 1, 3-7, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Friel (US 5,731,377) in view of Ishikawa (US 4,325,856).

The discussion with respect to Friel in paragraph 4 above is incorporated here by reference.

Art Unit: 1796

With respect to claims 1, 3-5, and 7, Friel fails to disclose the use of 0.001-0.5 moles of chain transfer agent.

Ishikawa discloses aqueous copolymer latexes prepared by emulsion polymerization and teaches that conventional chain transfer agents are used to regulate molecular weight of polymers and are preferably used in amounts of 0.1-1 wt % based on the amounts (which roughly converts to 0.005-0.05 mol/kg monomer when using n-dodecyl mercaptan as the chain transfer agent and acrylic acid as the monomer).

Given that it is common in the art to utilize chain transfer agents to control molecular weight (and thus properties such as viscosity) as taught by Ishikawa, it would have been obvious to one of ordinary skill in the art to utilize a chain transfer agent in the presently claimed amounts in order to control molecular weight.

With respect to claim 6, Friel only exemplifies one painting composition and therefore only explicitly discloses one value for PVC, nonetheless, it teaches that the amount of pigment affects the glossiness or mat of the resulting coating (col. 1, lines 44-48).

It is the examiner's position that the amount of pigment and therefore the PVC is a result effective variable because changing it will clearly affect the type of product obtained, e.g., a coating with a mat or glossy finish. See MPEP § 2144.05 (B). Case law holds that "discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art." See *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

In view of this, it would have been obvious to one of ordinary skill in the art to utilize a higher content of pigment including that within the scope of the present claim so as to produce desired end results, i.e., a less glossy finish.

Art Unit: 1796

7. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Friel (US 5,731,377) in view of Ishikawa (US 4,325,856) and further in view of Bricker (US 5,502,089).

The discussion with respect to Friel and Ishikawa in paragraph 6 above is incorporated here by reference.

Friel fails to disclose the use of sulfoethyl methacrylate or phosphoethyl methacrylate but teaches that monomers include conventional ethylenically unsaturated monomers typically used in the preparation of polymeric latex binders for use in coatings (col. 5, lines 32-35).

Bricker discloses a latex composition useful in coating compositions and teaches that monomers with phosphonate or sulfonate groups (e.g., phosphoethyl methacrylate and sulfoethyl methacrylate) can be used to provide crosslinking sites on the polymeric backbone (col. 2, lines 7-15).

Given that Friel is open to the use of other conventional ethylenically unsaturated monomers and further given that Bricker teaches that phosphoethyl methacrylate and sulfoethyl methacrylate are used to provide crosslinking sites, it would have been obvious to one of ordinary skill in the art to utilize phosphoethyl methacrylate and sulfoethyl methacrylate in order to facilitate crosslinking the composition to form a coating.

8. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Friel (US 5,731,377) in view of Bricker (US 5,502,089).

The discussion with respect to Friel in paragraph 4 above is incorporated here by reference.



Friel fails to disclose the use of sulfoethyl methacrylate or phosphoethyl methacrylate but teaches that monomers include conventional ethylenically unsaturated monomers typically used in the preparation of polymeric latex binders for use in coatings (col. 5, lines 32-35).

Bricker discloses a latex composition useful in coating compositions and teaches that monomers with phosphonate or sulfonate groups (e.g., phosphoethyl methacrylate and sulfoethyl methacrylate) can be used to provide crosslinking sites on the polymeric backbone (col. 2, lines 7-15).

Given that Friel is open to the use of other conventional ethylenically unsaturated monomers and further given that Bricker teaches that phosphoethyl methacrylate and sulfoethyl methacrylate are used to provide crosslinking sites, it would have been obvious to one of ordinary skill in the art to utilize phosphoethyl methacrylate and sulfoethyl methacrylate in order to facilitate crosslinking the composition to form a coating.

### ***Response to Arguments***

9. Applicant's arguments filed 6/23/2008 have been fully considered but they are not persuasive. Specifically, applicant argues that the process of making the polymer in the present product-by-process claims clearly provides for a different product.

In response to the argument, it is first noted that the data in Appendix A of the declaration filed on 12/21/2007 is not clear given that the black curves in each figure are not clearly labeled. Clarification is requested.

It is noted that applicant's evidence in the declaration that Friel's Example 3 does not exhibit more than one elution time (as shown in chromatogram chart with Examples AH0301

Art Unit: 1796

and AH303) cannot be relied upon to establish criticality for the presently claimed process. Case law holds that “applicant must look to the whole reference for what it teaches. Applicant cannot merely rely on the examples and argue that the reference did not teach others.” *In re Courtright*, 377 F.2d 647, 153 USPQ 735,739 (CCPA 1967). Furthermore, two of the three chromatogram charts show two elution times in both the inventive and comparative example. Therefore, it has not been established that the arguably critical effect of two elution times (and thereby arguably improved scrub resistance) is necessarily absent in the disclosure of Friel which does not include a step-wise addition of initiator.

Furthermore, the inventive and comparative data of the declaration and specification have been fully considered and are found to not be reasonably commensurate in scope with the claimed invention. Case law holds that evidence is insufficient to rebut a *prima facie* case if not commensurate in scope with the claimed invention. *In re Grasselli*, 713 F.2d 731, 741, 218 USPQ 769, 777 (Fed. Cir. 1983). In particular, only one type of acrylic emulsion polymer, initiator, and neutralizer are exemplified. Case law holds that evidence of superior properties in one species is insufficient to establish the nonobviousness of a subgenus containing hundreds of compounds. *In re Greenfield*, 571 F.2d 1185, 1189, 197 USPQ 227, 230 (CCPA 1978). Furthermore, the ranges of amounts of initiator (ammonium persulfate) and neutralizer (sodium carbonate) used in examples both at the beginning and during polymerization are not reasonably commensurate in scope with the presently claimed process ranges. See the Tables below. Case law holds that whether the unexpected results are the result of unexpectedly improved results or a property not taught by the prior art, the “objective evidence of nonobviousness must be commensurate in scope with the claims which the evidence is offered to support.” In other

Art Unit: 1796

words, the showing of unexpected results must be reviewed to see if the results occur over the entire claimed range (i.e., scope). *In re Clemens*, 622 F.2d 1029, 1036, 206 USPQ 289, 296 (CCPA 1980), MPEP 716.02(d).

Given that the amounts of initiator and neutralizer are important in the presently claimed process and further given that applicant has not shown that improved scrub resistance properties (which are arguably due to multiple elution times in GPC-MALS) are had throughout the presently claimed amount ranges, criticality for the entire scope of the presently claimed process on the final product cannot be supported.

Art Unit: 1796

Table 1: Comparison of Claim 1 to inventive and comparative data of the specification as originally filed.

	Emulsion	Total Initiator (wt % based on polymer)	Initiator, first 10% (wt % based on polymer)	Neutralizer (eq. basis of acid monomer)	Neutralizer, first 25 % (wt % based on total neutralizer)
<i>Claim 1</i>	<i>Any acrylic emulsion</i>	<i>0.3-0.4</i>	<i>open-ended &lt; 0.15</i>	<i>5-75</i>	<i>open-ended &lt; 50</i>
DATA FROM THE SPECIFICATION					
Example 1	MAA/BA/MMA	0.35	0.078	34.5	5
Comp. Ex. A	MAA/BA/MMA	0.35	0.078	34.5	100
Comp. Ex. B	MAA/BA/MMA	0.35	0.272	34.5	100
DATA FROM THE DECLARATION FILED ON 12/21/2007					
AH0331 (comparative)	BA/MMA/MAA/Ureido	0.3	0.18	56	100
AH307 (inventive)	BA/MMA/MAA/Ureido	0.3	0.07	56	2.4

Table 2: Comparison of Claim 2 to inventive and comparative data of the specification as originally filed.

	Emulsion	Total Initiator (wt % based on polymer)	Initiator, first 10% (wt % based on total initiator)	Neutralizer (eq. basis of acid monomer)	Neutralizer, first 25 % (wt % based on total neutralizer)
<i>Claim 2</i>	<i>Any acrylic emulsion</i>	<i>0.05-0.3</i>	<i>open-ended &lt; 50</i>	<i>5-75</i>	<i>open-ended &lt; 50</i>
DATA FROM THE SPECIFICATION					
Example 2	MAA/BA/MMA	0.135	22.2	34.5	5
Comp. Ex. C	MAA/BA/MMA	0.135	22.2	34.5	100
Comp. Ex. D	MAA/BA/MMA	0.135	77.8	34.5	100
DATA FROM THE DECLARATION FILED ON 12/21/2007					
AH0331 (comparative)	BA/MMA/MAA/Ureido	0.3	60.0	56	100
AH307 (inventive)	BA/MMA/MAA/Ureido	0.3	23.3	56	2.4
AH0309 (comparative)	BA/MMA/MAA/Ureido	0.05	60.0	56	100
AH0311 (inventive)	BA/MMA/MAA/Ureido	0.05	20.0	56	0

Art Unit: 1796

***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vickey Ronesi whose telephone number is (571) 272-2701. The examiner can normally be reached on Monday - Friday, 8:30 a.m. - 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

12/1/2008

vr

/Vickey Ronesi/  
Examiner, Art Unit 1796